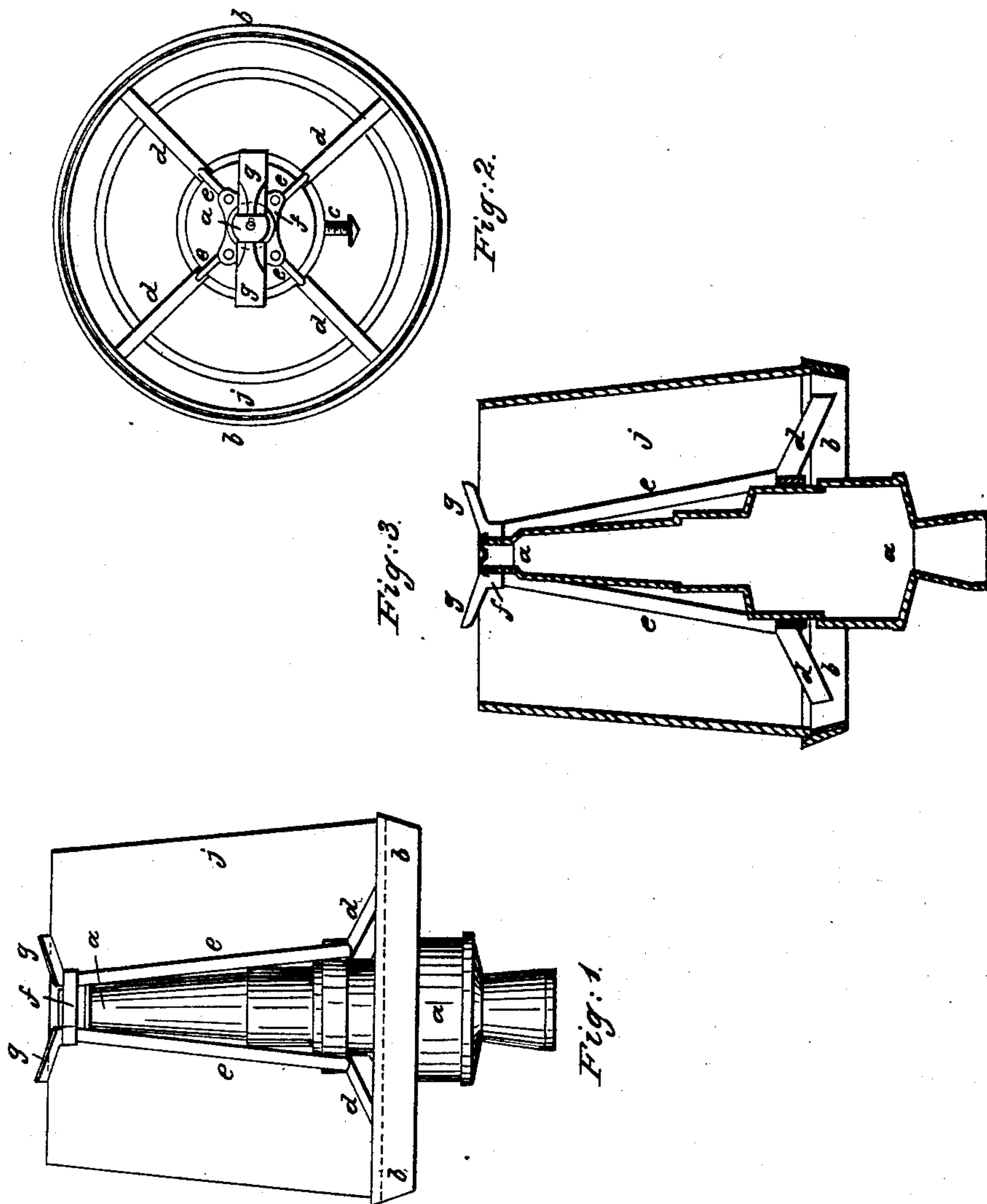


A. H. WOOD.

Gas Burner.

No. 21,586.

Patented Sept. 21, 1858.



# UNITED STATES PATENT OFFICE.

A. H. WOOD, OF BOSTON, MASSACHUSETTS.

## GAS-BURNER.

Specification of Letters Patent No. 21,586, dated September 21, 1858.

*To all whom it may concern:*

Be it known that I, A. H. Wood, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Gas-Burners, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings represent my improvements.

Figure 1 is a side elevation of my improved gas burner. Fig. 2 is a plan or top view of the same. Fig. 3 is a central vertical section.

Among the most important and desirable results which have been sought for in the construction of gas burners, may be mentioned the obtaining from a given quantity of gas, the greatest amount of light, consuming all the gas which passes through the orifice of the burner, so as to use the same economically, and prevent its escape into the apartment, and finally producing a brilliant and steady flame, which is free from the flickering effect that occurs in the use of nearly all the gas burners which have been devised. These results are all obtained by my improvements, which consist in a novel arrangement of devices, by which the width of the flame is increased, and the heat from the flame conducted to a height above the orifice of the burner, for a purpose hereinafter specified.

The above named devices may be applied to any ordinary bat-wing or fish-tail burner, and consist of two projections or "spreaders," as I term them attached at any proper angle to the top of the burner, and four or any other number of metallic rods or tubes, also attached to the top of the burner, near the flame, and leading to an annular ring connected to the bottom of the burner. This ring supports a glass cone or cylinder, which extends no higher than the top of the burner, and consequently does not obstruct or shade the light.

Having thus premised the leading features of my invention, I shall now proceed

to describe the construction of my improved gas-burner.

*a, a*, in the drawings represents a fish-tail burner, constructed in the usual manner.

*b, b*, is an annular ring, fastened near the bottom of the burner, by a set screw *c*, and supports a cone or cylinder *j*, which reaches about to the top of the burner.

From the cross bars *d, d, d, d*, proceed four the metallic rods or bars, *e, e, e, e*, converging toward the top of the burner, and inserted in a metallic plate *f*, which fits over the burner, resting just below the top of the same. To the plate *f*, at an obtuse angle with the top of the burner, and on either side of the orifice, are arranged two metallic flanges or spreaders *g, g*, which project out from the top of the burner, as shown in the drawings. The office of these flanges *g, g*, is to serve as a support to the base of the flame, and to spread or increase the width of the same.

When a flame is applied to the gas which is issuing from the orifice of the burner, the flanges *g, g*, become heated, and conduct the flame out until it reaches their extremities, thus forming a flame as wide as the distance between the outer extremities of the flanges *g, g*. The plate *f*, soon becomes heated by the flame, and thus heats the rods *e, e, e, e*, which conduct the heat to the bottom of the burner. The air about the burner and between the same and the cone or cylinder *j*, thus becomes heated, and thereby creates a draft of hot air, which is conveyed to the flame. The force of this draft serves to keep the flame steady, and prevent its flickering.

As gas burners are usually constructed, the gas is forced at a high pressure through a small orifice, this high pressure being necessary, in order to afford a moderate degree of steadiness to the flame. As gas will burn much better at a low than at a high pressure, it will be seen that this mode of obtaining a steady light, or an approximation to the same, by a high pressure of gas, is objectionable.

By my improvements as will be evident by the foregoing description, the steadiness of the flame is produced by the flanges, or spreaders, *g, g*, and the draft produced by the conductors *e, e*, &c., thereby permitting the use of a large orifice in the burner, and enabling me to burn gas at a very low



pressure, which experience has proved to be the most favorable for producing a brilliant light, and the most economical consumption of the gas. It will further be evident that the devices herein above described for spreading and steadying the flame, may be successfully applied to my self regulating gas-burner, for which I obtained Letters Patent, bearing date the ninth day of November, in the year 1852, and described in the schedule annexed to the same.

I am aware that metallic plates, or spreaders, have been attached to oil lamps, for the purpose of facilitating the capillary attraction, and thereby aiding combustion, but metallic plates or spreaders which conduct the heat to a height above and beyond the orifice of the burner, have never heretofore been attached to gas burners, and consequently, I shall claim the combination with a gas burner, of the metallic spreaders or flanges, constructed as described. This arrangement of the spreaders has the effect of conducting the particles of coal tar, &c., that

obstruct the orifices of gas burners, as usually constructed, to the points of extreme heat, which, in this case, are in the flanges, or spreaders, instead of in the orifice itself as in other gas burners, thereby drawing, as it were, all the impurities from the orifice of the burner, and consuming them on the spreaders or flanges, leaving a kind of ashes upon the same, which can readily be removed.

I claim—

The combination with a gas burner of metallic flanges, or spreaders, arranged near and above the orifice of the burner as described, for the purpose of spreading the flame and consuming the impurities of the gas, whereby the orifice is kept clear, as set forth, and this I claim whether the conducting rods be used or not.

A. H. WOOD.

Witnesses:

ESRA LINCOLN,  
JOSEPH GAVETT.